

Amendment and Response Under 37 C.F.R. 1.116

Applicant: Michael Bauer et al.

Serial No.: 10/789,033

Filed: February 27, 2004

Docket No.: I431.103.101/FIN 423 US

Title: ELECTRONIC COMPONENT AND SEMICONDUCTOR WAFER, AND METHOD FOR PRODUCING THE SAME

REMARKS

The following remarks are made in response to the Advisory Action mailed on March 29, 2007, and further in response to the Final Office Action mailed January 8, 2007. Claims 1-5 and 15-20 have been cancelled herein. With this Response, claims 6, 11 and 12 have been amended. Claims 6-14 remain pending in the application and are presented for reconsideration and allowance.

Advisory Action Items 3 and 7

Blocks 3(a) of the Advisory Action were checked, indicating the proposed amendments would not be entered, referring to the continuation sheet. The continuation sheet first states, "Claim 6, as Applicants propose to amend it, could be rejected under 112, 2nd paragraph for lack of antecedent basis for it recites 'the rear sides of the semiconductor chips.'"

The preamble of claim 6 recites "A semiconductor chip with a top side, *a rear side*, ..." (emphasis added). This provides the antecedent for "*the rear sides of the semiconductor chips*" that is recited in the last clause of the claim, which also recites a plurality of additional semiconductor chips (each having a rear side as set forth in the preamble). As such, the claims provides proper antecedent basis for the recited elements.

The continuation sheet goes on to address claims 18-20. These claims have been canceled herein.

Block 7 of the Advisory Action is also checked, indicating "For purposes of appeal, the proposed amendment(s) a) will not be entered."

Applicants believe the proposed amendments overcome all of the rejections and objections set forth in the Final Office Action without raising new issues. At a minimum, Applicants respectfully submit the proposed amendments simplify issues for appeal. These issues are addressed in the further remarks below.

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Election/Restriction

Section 2 of the Office Action characterized claims 18-20 as being directed to an invention that is independent or distinct from the invention originally claimed, referencing 37 CFR 1.142(b) and MPEP 821.03. Without going further into the merits of this characterization of claims 18-20, Applicants have cancelled claims 18-20 in an effort to move the application to allowance.

Drawings

The Advisory Action **failed to indicate** whether the objections to the drawings were overcome by the claim amendments filed in the previous response and again in this response. As noted in the previous response, section 3 of the Office Action objected to the drawings under 37 CFR 1.83(a) specifically with regard to features recited in claims 4 and 6. Claim 4 has been cancelled. Claim 6 recites “the rear sides of the semiconductor chips are oriented virtually perpendicular to a top side of the circuit substrate.” This is illustrated, for example, in Figure 9, which shows rear sides of chips 6 oriented perpendicularly to the top surface 25 of the insulated substrate 35.

Applicants therefore respectfully request the objections to the drawings be withdrawn.

Specification

The Advisory action **failed to indicate** whether the amendment to claim 6 would overcome the objection to the specification with regard to claim 6 raised in section 4 of the Office Action. Claim 6 has been amended to provide antecedent basis for the *circuit substrate*. The specification provides ample disclosure of the circuit substrate.

Claim Rejections under 35 U.S.C. § 112

Sections 5-6 of the Office Action rejected claim 4 under 35 U.S.C. § 112, first paragraph. Claim 4 has been cancelled, rendering this rejection moot.

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Sections 7-8 of the Office Action rejected claims 4 and 6-14 under 35 U.S.C. § 112, second paragraph. Claim 4 has been cancelled. Claim 6 has been amended to correct an informal error, changing “semiconductor wafers” to – semiconductor chips – .

In view of the above, all of the rejections under 35 U.S.C. § 112 are believed to be overcome.

Claim Rejections under 35 U.S.C. § 102

Sections 9-11 rejected claims 4 and 5 under 35 U.S.C. § 102(b). Claims 4 and 5 have been cancelled, rendering their rejections moot.

Claim Rejections under 35 U.S.C. § 103

The Office Action rejected claims 6-14 under 35 U.S.C. § 103 as allegedly being unpatentable over Nakajima JP 2002-299372 (“Nakajima”) in view of Koike et al. WO 03/012868 (equivalent to U.S. Patent No. 7,071,028, collectively “Koike”). Applicants respectfully traverse these rejections.

Claim 6 has been amended to correct informalities, more specifically, to recite “rear sides of the semiconductor *chips*”; and also to recite these chips being “oriented virtually perpendicular to a top side of the circuit substrate.” The recitation of the chips being stacked one on the other has also been deleted.

Claim 6 thus includes semiconductor chips oriented such that the rear sides of the semiconductor chips are oriented virtually perpendicular to a top side of the insulated substrate. The Office Action admits that Nakajima fails to disclose additional chips, but refers to Figures 6, 23 and 32 of Koike, stating Koike discloses chips “on an insulated substrate 18 such that the rear sides of the semiconductor wafers are oriented virtually perpendicular a top side of the substrate.”

Figure 32 of Koike is reproduced below.

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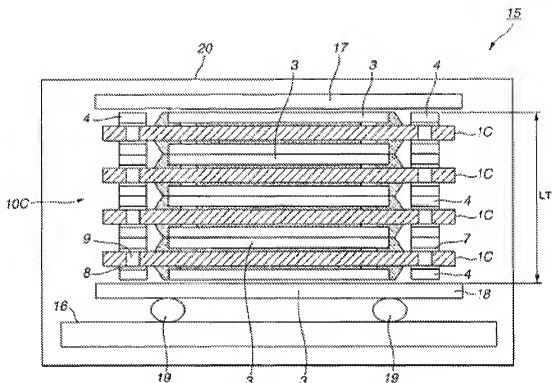


FIG.32

Referring to Figure 32, Koike discloses a lower protective substrate 18. See col. 18, ll. 16-18. However, Figure 32 of Koike clearly shows the rear sides of the semiconductor chips 3 being oriented parallel to the top side of the substrate 18.

As such, Applicants respectfully submit claim 6, and all of the claims dependent on claim 6, are patentable over the combination of Nakajima and Koike.

Moreover, the rejection of claim 6 set forth in the Final Office Action based on Nakajima and Koike clearly examined the claims based on semiconductor *chips*. For example, Koike explicitly describes the structures associated with reference number 3 (shown in exemplary Figure 32 reproduced above) as *semiconductor chips*. See, e.g., Koike at abstract. Final Office Action refers to these *chips* of Koike, stating that they are oriented virtually perpendicular to a top side of the substrate. Final Office Action at p. 7. As shown in the figure reproduced above, the chips 3 are actually oriented parallel to the top side of the substrate. In any event, the references to the *chips* of Koike in the rejection of claim 6 indicate that the claim was examined

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in terms of semiconductor *chips* being oriented perpendicular to a substrate. Therefore, amending claim 6 to change *wafers* to *chips* does not appear to create new issues requiring additional search.

CONCLUSION

As evidenced by the amendments and remarks presented above, Applicants have made a genuine effort to respond to each concern raised in the Advisory Action and the Final Office Action. The amendments presented are believed to place the application in condition for allowance. At a minimum, the amendments simplify issues for appeal. As such, Applicants respectfully submit the amendments presented herein are proper for entry under 37 CFR 1.116. In the alternative, Applicants request withdrawal of the finality of the Office Action to allow response to any further concerns the Examiner may have.

The commissioner is hereby authorized to charge Deposit Account No. 50-0471 for any fees that may be required in conjunction with this paper.

The Examiner is invited to contact the Applicant's representative at the below-listed telephone numbers to facilitate prosecution of this application.

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Any inquiry regarding this Amendment and Response should be directed to Mark L. Gleason at Telephone No. (612) 767-2503, Facsimile No. (612) 573-2005. In addition, all correspondence should continue to be directed to the following address:

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Respectfully submitted,

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